

What is claimed is:

1. A method for inhibiting rejection by a host mammal of donor tissue from another mammal which is to be transplanted into the host mammal, said method comprising treating said donor tissue with an enzyme effective for temporarily ablating MHC Class I antigens from said donor tissue and transplanting said treated donor tissue into said host mammal.
2. The method according to Claim 1, wherein said donor tissue is from a mammal that is the same species as said host mammal.
3. The method according to Claim 1, wherein said donor tissue is from a mammal that is of a different species than said host mammal.
4. The method according to Claim 1, wherein said host mammal is a human.
5. The method according to Claim 1, wherein said tissue comprises blood cells, neurons, hepatocytes, cardiac cells, genetically modified cells, skin cells, precursor cells, endothelial cells, fibroblasts, myoblasts, islets of Langerhans cells, or bone marrow cells.
6. The method according to Claim 1, wherein said tissue is an organ or part of an organ.
7. The method according to Claim 6, wherein said organ is selected from the group consisting of skin, kidney, heart, pancreas, brain, and liver.
8. The method according to Claim 1, wherein said donor tissue is additionally treated with a second enzyme effective to remove an antigenic surface structure from said donor tissue.
9. The method according to Claim 1, wherein said enzyme is papain.
10. The method according to Claim 8, wherein said second enzyme is α -galactosidase.

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11. The method according to Claim 8, wherein said donor tissue is treated with a combination of papain and α -galactosidase.

12. A method for inhibiting rejection by a host mammal of donor tissue from another mammal which is to be transplanted into the host mammal, said method comprising:
treating a first donor tissue with an enzyme effective for temporarily ablating MHC Class I antigens from said donor tissue,
transplanting said treated donor tissue into said host mammal for a period sufficient for MHC Class I antigens to regenerate in cells of said treated donor tissue, and
transplanting a second donor tissue into said host mammal.

13. A method according to Claim 12, wherein said first donor tissue is donor lymphocytes.

14. A method according to Claim 12, wherein said second donor tissue is also treated prior to transplantation with an enzyme effective for removing MHC Class I antigens from said tissue.

15. A method for preparing donor tissue from one mammal for transplant into another, host mammal comprising treating said donor tissue with papain to temporarily ablate MHC Class I antigens from said donor tissue.

16. The method according to Claim 15, wherein said donor tissue is from a mammal that is the same species as said host mammal.

17. The method according to Claim 15, wherein said donor tissue is from a mammal that is of a different species than said host mammal.

18. The method according to Claim 15, wherein said host mammal is a human.

19. The method according to Claim 15, wherein said tissue comprises blood cells, neurons, hepatocytes, cardiac cells, genetically modified cells, skin cells, precursor cells, endothelial cells, fibroblasts, myoblasts, islets of Langerhans cells, or bone marrow cells.

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20. The method according to Claim 15, wherein said tissue is an organ or part of an organ.

21. The method according to Claim 20, wherein said organ is selected from the group consisting of skin, kidney, heart, pancreas, brain, and liver.

22. The method according to Claim 15, wherein said donor tissue is treated with a solution of papain at 5-60 mg/ml for a period of 5 minutes to 24 hours.

23. The method according to Claim 22, wherein said solution contains 20-28 mg/ml papain and said tissue is treated for 30-120 minutes.

24. Mammalian transplant tissue suitable for transplantation into a mammalian host comprising mammalian tissue that has been treated with an enzyme effective for cleaving MHC Class I antigens, in an amount and for a period sufficient to temporarily ablate the mean MHC Class I density on said tissue by at least 75% while maintaining at least about 75% viability of the cells of said tissue.

25. Mammalian transplant tissue according to Claim 24, wherein said enzyme is papain.

26. Mammalian transplant tissue according to Claim 24, wherein said enzyme is a combination of papain and α -galactosidase.

27. A transplantation pack comprising donor tissue suitable for transplantation into a host mammal in a nutrient or preservative solution for maintaining the donor tissue in viable state, said solution also containing an enzyme suitable for temporarily ablating MHC Class I antigens from the surface of the cells of the donor tissue.

28. The transplantation pack according to Claim 27, wherein the donor tissue is porcine tissue of adult or fetal origin.

29. The transplantation pack according to Claim 27, wherein the donor tissue is human tissue of adult or fetal origin.

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30. The transplantation pack according to Claim 27, wherein the donor tissue comprises blood cells, neurons, hepatocytes, cardiac cells, genetically modified cells, skin cells, precursor cells, endothelial cells, fibroblasts, myoblasts, islets of Langerhans cells, or bone marrow cells.

31. The transplantation pack according to Claim 29, wherein the donor tissue is whole blood.

32. The transplantation pack according to Claim 27, wherein the enzyme is in inactive form, and wherein the transplantation pack further includes means for activating the enzyme prior to use of the donor tissue.

33. The transplantation pack according to Claim 27, wherein the enzyme is papain.

34. The transplantation pack according to Claim 27, wherein said solution additionally contains a second enzyme suitable for cleaving a surface antigenic structure on the surface of the cells of the donor tissue.

35. The transplantation pack according to Claim 34, wherein said second enzyme cleaves α -gal.

36. The transplantation pack according to Claim 35, wherein said second enzyme is α -galactosidase.

37. The transplantation pack according to Claim 27, containing a combination of enzymes including papain and α -galactosidase.

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